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Victimization?

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Abstract

Previous research indicates considerable overlap between populations of boys who are victimized and boys who victimize others. This study was concerned with whether a systems-focused treatment program designed to address individual and systemic risk factors associated with the perpetration of sexual and violent crimes might also be successful in reducing boys' victimization by others. Boys adjudicated for sexual offences who received 'treatment as usual' (TAU; $n = 335$) were compared with similarly adjudicated boys who completed the treatment program ($n = 200$) on their histories of contact with police either as offenders or victims. Despite their higher rates of pre-intervention victimization, the treatment group were victimized less frequently post-intervention than the TAU group. Continued offending was the strongest predictor of victimization post-intervention. These findings suggest that offending and victimization share common risk factors that may be addressed simultaneously within offence-focused treatment.

Keywords: systemic interventions, sexual offending, victimization, vulnerable populations, male youth offenders

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Introduction

Offending and victimization are usually studied separately. However, evidence indicates a considerable overlap between youth offending and youth victimization, with higher rates of victimization among youth offenders and higher rates of offending among victims (Deadman & MacDonald, 2004; Jennings, Piquero, & Reingle, 2012; Posick, 2013; Widom & Maxfield, 2001). Some of the highest rates of both offending and victimization are among young males (Shaffer & Ruback, 2002).

It has been repeatedly demonstrated that a substantial number of offenders are likely to be or have been victimized at some time in their lives (Cops & Pleysier, 2014; Loeber, Kalb, & Huizinga, 2001; Shaffer & Ruback 2002, Zhang, Welte, & Wieczorek, 2001). Studies of justice-involved youth, including those who engage in sexually harmful behavior, document the significant proportion of victimization, exposure to violence and trauma experienced during childhood (Dierkhising, et al. 2013; McMackin, et al. 2002; Wilson et al. 2013). Other studies have shown that offenders are up to seven times more likely than non-offenders to be victims, and that victims are two to seven times more likely than non-victims to be offenders (Desai, Aria, Thompson, & Basile, 2002; Finkelhor, Ormrod, & Turner, 2007; Widom & Maxfield, 2001). In fact, childhood maltreatment and neglect have been found to increase the likelihood of imprisonment by 59% in adolescence and by 28% in adulthood (Widom & Maxfield, 2001). There is also some evidence to suggest that the trauma associated with these victimization experiences influences both initial involvement in offending (Ardino, 2012;; Smith & Thornberry, 1995; Widom & Maxfield, 1996) and re-offense risk (Ardino, Milani, & Di Blasio, 2013).

Several studies have examined the exposure of youth to victimization through engagement in delinquent and criminal activity, often termed the victim-offender overlap. For instance, Jennings et al. (2012) identified 37 independent studies in which the 'victim-offender' overlap was investigated. The majority of these studies (31; 84%) provided considerable support for this overlap. The remaining six studies demonstrated limited or moderate support. Shaffer and Ruback (2002) found that youth offenders were six times more likely to be victimized, compared to those who had never offended (42% versus 7%). Youth who had been victimized in the previous year were more likely than non-victims to be offenders (78% versus 32%). It has also been shown that the greater the extent and variety of delinquent involvement, the greater the risk of coincident victimization (Esbensen & Huizinga, 1991; Jensen & Brownfield, 1986; Smith & Ecob, 2007). Smith and Thornberry (1995) found high correlations between offending and victimization during ages 13-17, and particularly at age 15 when youth offending peaks.

In their longitudinal study, Lauritsen, Sampson and Laub (1991) found crime victimization in youth to be linked to ecological and lifestyle factors (e.g., late night activity, public drinking) along with other personal factors associated with delinquent and offending behavior. They subsequently reported that involvement in offending was the strongest predictor of victimization, with young offenders being three times more likely than non-offenders to be assaulted (Lauritsen, Laub, & Sampson, 1992). Hence, they argued that offending and victimization were often intertwined, mutually stimulating each other, making it difficult to understand either offending or victimization without consideration of the other. As involvement in offending appeared to substantially increase the risk of victimization in these youths, they concluded that one of the key components of victimization prevention initiatives for youth is delinquency prevention and recommended the potential for merging such strategies.

It should not be surprising then that research has also found offending and victimization share common risk factors (e.g., Jensen & Brownfield, 1986; Posick, 2013; Shaffer & Ruback, 2002) with, for example, both offenders and victims being single, unemployed, not engaged in school, and of lower socio-economic status (Hindelang, Gottfredson, & Garofalo, 1978) compared to non-victims and non-offenders. Systemic factors such as life course adversities, harsh discipline, family problems and instability, and neighborhood conditions are also common in the childhoods of these populations (Finkelhor & Asdigian, 1996; Shaffer & Ruback, 2002). Schreck and Fisher's (2004) study highlighted two primary social contexts, peers and family, that influence victimization risk in youth particularly. These findings highlight the systemic risk factors (social structures and contexts) common to offending and victimization, in addition to individual risk factors that likely warrant addressing as part of an intervention program, and may be especially pertinent for youth programs.

Lifestyle/exposure theory (Hindelang et al., 1978) and routine activities theory (Cohen & Felson, 1979) are perhaps the most dominant perspectives used to explain the overlap between victim and offender populations. The lifestyle/exposure theory is used to explain the variations in victimization risk across social groups. It is based on the correlation between victimization and lifestyle choices, assuming that different lifestyle choices are linked to exposure and proximity to offender populations, and that this is related to the variance of victimization risk (Hindelang et al., 1978). Hindelang et al. (1978) explained this link between victimization and offending using the principle of 'homogamy'; that it is these shared routines and lifestyle factors that help to explain the overlap. For youth, risk is a product of both exposure to, and interaction with, youth who are involved in criminal activities. Similarly, Cohen and Felson (1979) explained through their routine activities theory that offending and victimization occur with the merging of three factors: (1) a

motivated offender; (2) a suitable target; and, (3) the absence of a capable guardian. They argued that when these three factors align in time and space, the likelihood of an offence is increased.

Miethe and Meier (1994) identified four important aspects of these theories to explain the connection between lifestyle and victimization risk: (1) physical *proximity* to crime, (2) *exposure* to criminals (e.g., connections forged with potential offenders), and (3) *target attractiveness* (e.g., aggressive traits, possessing desirable goods) and (4) reduced *guardianship* (e.g., presence of others who are capable to intervene) that increases individual vulnerability for victimization. With regard to youth, these theories highlight the victims' connection to offending and the fact that certain lifestyles and activities place certain groups of youths in closer proximity and increased exposure to potential offenders, in contexts of limited or no guardianship. Such frequent interactions with these individuals in turn places them at greater risk of potential victimization compared to their non-offending counterparts (Deadman & MacDonald, 2004; Finkelhor & Asdigian, 1996).

Strain (Agnew, 1992; Agnew, Brezin, Wright, & Cullen, 2002), subcultural (Wolfgang & Ferracuti, 1967), social control (Hirschi, 1969), and social disorganization (Lauritsen, 2001; Miethe & Meier, 1994; Rountree, Land, & Miethe, 1991) theories have also been used to explain crime victimization. Again, common themes underlying these theories highlight a number of systemic factors (e.g., social bonding and social ties; subculture influences; neighborhood factors; absence of supervision and guardianship; and social context) conducive to offending behavior that also serve to increase risk of victimization, especially in youth. This suggests that crime victimization results from a multitude of broad social and micro situational influences, similar to those associated with offending. Posick's (2013) findings confirm such propositions. Thus, youth victimization and offending cannot be fully understood independently of one another, or of the social context in which they occur

(Lauritsen et al. 1991; Meier, Kennedy, & Sacco, 2001; Sampson & Lauritsen 1994; Singer 1981).

Despite what is known about the overlap between offending and victimization risk in youth, there remains little consideration of this in prevention initiatives. Of particular importance to the present study, theoretical and empirical research points to the potential for interventions that target systemic factors underpinning antisocial and criminal behavior more generally, to produce simultaneous reductions in offending and victimization for these youths (Shaffer, & Ruback, 2002). Attempts at understanding the nature of the victim-offender overlap for specific crimes have gained momentum in recent years. Our interests for this study are violent interpersonal crimes, including those of a sexual nature.

Although the exact prevalence is difficult to establish, it is clear that a considerable proportion of sexual offences are perpetrated by youths. Finkelhor, Ormrod, and Chaffin (2009) reported that in the USA, one-quarter (26%) of all sex offenders were youths and more than one-third (36%) of those who offended did so against youth victims. The overlap between victimization and perpetration has also been noted within this population. From clinical observations, Hunter, Goodwin, and Becker (1994) reported that 40 to 80% of youths who committed sex offences reported childhood sexual victimization, with 20 to 50% also having a history of physical abuse (Hunter & Figueredo, 1999).

Weeks and Widom (1998) reported that a quarter of sex offenders had been sexually abused in childhood, one-fifth reported child neglect and two-thirds childhood physical abuse. More recently it was noted that one-third of male prisoners in the United States reported sexual abuse in their childhoods (Courtney & Maschi, 2013) and that 42% of 679 USA offenders reported child physical abuse, 38% reported sexual abuse, and 38% reported emotional neglect (Levenson, Willis, & Prescott, 2014). Reavis, Looman, Franco, and Rojas (2013) demonstrated that rates such as these were higher than those found in the general male

population. Only 9% of the offender sample reported no adverse experiences, compared to 38% of the general sample, and 48% of the offender sample reported four or more adverse experiences, compared to 9% of the general sample. Leach, Stewart, and Smallbone (2016) demonstrated in a prospective longitudinal study of 38,282 males that poly-victimization specifically, i.e., exposure to multiple types of maltreatment, was significantly associated with sexual offending and violent offending.

Given the clear overlap between the victim and perpetrator populations, and the shared risk factors identified, it is our hypothesis that interventions designed to reduce youth reoffending are also likely to reduce their own subsequent victimization. More specifically, interventions that focus on reducing the personal and systemic vulnerabilities known to be associated with youth offending, and which are also associated with victimization, are likely to reduce exposure to common offending-related and victim-related situations. Although interventions for youth who have been convicted of sexual offences can be effective at reducing re-offending (Schmucker & Losel, 2015), as far as we are aware there are no published studies in which the impact of such interventions on offenders' own victimization has been evaluated.

The focus of the present study was a systems-focused treatment program for youths who have sexually offended and which has been demonstrated to be more effective in reducing reoffending over time than 'treatment as usual' (TAU) programs (Ogilvie, Smallbone, Allard, McKillop, & Wells, 2016). The impact of the program on the youths' own victimization and the factors associated with future victimization has hitherto not been examined and is the aim of this study. We utilized longitudinal data to test our hypothesis that victimization rates for boys who engaged in the systems-focused treatment program would be lower than for those youths receiving TAU. Because of the common systemic risk factors

associated with offending and victimization, we hypothesized that, in cases where offending did occur post-intervention, this would predict further victimization.

Method

Intervention Program

Operating since 2001, the Griffith Youth Forensic Service (GYFS) is a university-based program providing a state-wide specialized clinical forensic assessment and treatment service to youth adjudicated for sexual offences in Queensland, Australia. Referral to the treatment program is based on referral by Department of Justice and Attorney General (DJAG). The most serious and complex (high-risk, high-needs) clients are initially prioritized. Due to high demand on the program, and limited resources, not all clients referred to GYFS can be accepted into the program. Priority is therefore given to cases where complex risks or needs are identified, and/or to clients in rural or remote areas, who would otherwise not have access to any (or very limited) specialist intervention services. Those referred to the service, but who did not meet the threshold for acceptance in the program at the time of referral, are re-referred and processed as usual through the youth justice system.

In accordance with the Risk-Needs-Responsivity model (Andrews & Bonta, 2006), and in line with social ecological approaches (e.g., Bronfenbrenner, 1979), the program targets a limited number of individual, family, peer, organisational, and sometimes neighborhood factors relevant to the risks for further sexual and violent offending. The selection of specific treatment targets is based on individualised assessments, and therefore varies considerably from case to case. The Service has three core practice components.

First, the Service is field-based; all assessment and treatment is delivered where the client resides. That means that clinicians travel throughout the State and often to remote areas to undertake assessment and deliver treatment. This approach aims to improve accessibility to services as well as enhance the client's sense of comfort and potential for engagement.

Furthermore, it enables the clinicians to attain an understanding of key contextual factors associated with the client's offending behavior.

Second, the Service provides individualized, multisystemic assessment and treatment intervention in line with social ecological approaches and prioritizes high-risk, high-need cases. The clinicians conduct an individual and comprehensive ecosystems-based assessment that integrates offender, offence and systemic elements to directly inform individual treatment and risk management planning.

Third, clinicians form collaborative partnerships with several key stakeholders from the client's environment that can improve treatment through collaborative treatment services. This approach ensures that the client's natural ecological and cultural needs are met, maintains service continuity, and facilitates treatment engagement (For more detailed information on the program please refer to Allard, Rayment-McHugh, Adams, Smallbone, & McKillop, 2015; Smallbone, Crissman, Rayment-McHugh, 2009).

Participants

The study sample comprised 200 boys adjudicated for sexual offences and who completed the treatment program during 2001 and 2012 (treatment group) and 335 boys adjudicated for sexual offences during this same time period, but who had not been referred to the treatment program ($n = 239$) or had been referred but were not accepted for treatment ($n = 96$). This group received standard youth justice interventions (treatment as usual; TAU) during the same time period. The treatment and TAU groups were comparable on a range of demographic (e.g., Indigenous status, age at referral and residential location) and offence characteristics (e.g., number and type of previous offences). Overall, about one-third ($n = 189$, 35%) of all participants identified as Indigenous Australian. This was similar across the groups; the proportion of Indigenous Australian males was 31% for the treatment group and 38% of the TAU group, $\chi^2(1, N = 535) = 3.26, p = .07$. About one-tenth ($n = 52$, 11%) of all

participants resided in remote or very remote communities based on the Accessibility and Remoteness Index of Australia (ARIA) classification (Commonwealth Department of Health and Aged Care, 2001). Again this proportion was similar between the groups (10% treatment group & 12% TAU group), $\chi^2 (1, N = 475) = .32, p = .57$.

Both groups were similar in age at the time of sentencing for their referral offence; the treatment group were, on average, 15.5 ($SD = 1.37$) years old, while the TAU group was, on average, 15.6 ($SD = 1.40$) years old, $t (533) = -.656, p = .51$. The treatment group were sentenced for, on average, 2.76 sexual offences ($SD = 4.71$, range 1-60). This was significantly higher than the TAU group who had been sentenced for, on average, 2.01 ($SD = 2.32$, range 0 - 22) sexual offences, $t (257.82) = -2.08, p < .05$. About one-third of participants also received sentences for a violent offence.

Both groups had similar offence histories; 35% of the treatment group ($M = 0.89, SD = 1.92$, range 0-12) and 30% of the TAU group ($M = 0.97, SD = 1.99$, range = 0-17) had previously committed a violent offence, $t (532) = .456, p = .65$. About two-thirds of participants had also received previous sentences for a nonviolent offence. This proportion was again similar across the two groups with 63% of the treatment group ($M = 8.77, SD = 16.63$, range 0 - 98) and 64% of the TAU group ($M = 10.58, SD = 19.88$, range 0-143) having received sentences for nonviolent offences, $t (532) = 1.083, p = .28$.

Measures

Data were sourced from multiple agencies including GYFS (e.g., treatment completion dates), Department of Justice and Attorney General (DJAG; Youth Justice order end dates) and Queensland Police Service (QPS; offending and victimization data) as part of a larger nationally-funded research project investigating the development, onset, and progression of youth sexual violence and abuse. In this project, participants' histories of contacts with police as both an offender and as a victim were obtained over an approximate

20-year period, from January 1993 to November 2012. These measures are outlined below.

Offending histories. Variables on participants' offending histories included dates of offences, with offences classified according to 16 offence categories and descriptions based on the Australian and New Zealand Standard Offence Classification (Australian Bureau of Statistics [ABS], 2011). The 16 offence categories were used to classify offences into three broad categories: sexual offences; violent offences; and non-sexual, non-violent ("other") offences. *Sexual offences* encompassed offences that were of sexual nature, such as sexual assault, rape, attempted rape, willful or indecent exposure and bestiality offences. *Violent offences* encompassed all offences that involved actual or threatened violence against another person, such as assault, robbery, extortion, abduction, stalking, break and enter with violence or threats, going armed to cause fear, and homicide. *Other offences* comprised all other offences remaining, such as arson, theft, drug offences, fraud, property damage, break and enter, and dangerous driving. Outcomes on these data have been reported elsewhere (Allard et al., 2015; Ogilvie et al., 2016), but were included in some analyses within this study.

Victimization histories. Official police records of participants' contact with the police as victims were also obtained from QPS. This included all offences for which the participants had been identified as victims between January 1993 and November 2012. Variables on participants' victimization histories included dates of offences, with offences classified according to the same 16 offence categories and descriptions used for the offending data (ABS, 2011). These categories were further classified into three victimization categories based on the same categorization as the offending data: sexual victimization, violent victimization, and "other" victimization (victimization other than offences of a sexual or violent nature, e.g., child neglect).

For both the offending and victimization measures, a binary variable (yes/no) was created for each offence category to indicate the presence or absence of

offending/victimization at different points across the time period. The number of offences per offence/victimization category was also aggregated for each participant. The time points of interest for this study were: (1) prior to intervention and (2) post intervention.

When examining victimization through survival analysis, victimization was classified as an offence committed against an individual (yes/no) during the follow-up period. The follow-up period accounted for the days from Department of Justice and Attorney-General (DJAG) Youth Justice order end date (TAU group) or treatment completion (treatment group) until the date of data extraction (21st November 2012). There was a significant difference in mean follow-up times when both groups used order end date as a starting point, the follow up time for the treatment group was lower ($M = 1689.23$, $SD = 1104.89$) than the TAU group ($M = 2466.59$, $SD = 1260.46$), $t(533) = -7.221$, $p = .000$. As we were primarily interested in the effect of intervention, treatment end date was used for the treatment group in an effort to reduce these time differences. While some improvement was evident, the difference remained significant with an average follow-up time for the treatment group shorter ($M = 1850.58$, $SD = 1143.58$) than the TAU group ($M = 2466.60$, $SD = 1260.46$), $t(533) = -5.663$, $p = .000$. Accordingly, at the end of the follow-up period, the treatment group was significantly younger on average ($M = 22.21$, $SD = 3.30$, range = 16-29) than the TAU group ($M = 23.61$, $SD = 3.55$, range = 14-33), $t(533) = 4.552$, $p < .001$. However, this effect size was small ($\eta^2 = .04$).

Procedure

Data were obtained under the strict protocols approved by the Griffith University Human Research Ethics committee and in line with external research agreements with DJAG and QPS. To ensure participants' privacy and confidentiality at all times, a list of department identification numbers were compiled by the research team and sent to DJAG (who have the code key) for re-identification purposes. DJAG then provided the list of participants (i.e.,

names, gender, and date of birth) to the QPS research team who extracted the offending and victimization records. The databases were then de-identified and returned to the research team for analysis.

Data were analyzed using SPSS Version 22. Bivariate (Chi-Square) analyses were conducted to compare the proportion of boys within each group who had been victimized, both prior to and post intervention. Survival analyses were conducted, using the Kaplan-Meier estimate (Kaplan & Meier, 1958) to compare victimization outcomes post intervention. Last, a binary logistic regression was performed to ascertain whether the intervention type, previous victimization experiences or reoffending predicted likelihood of victimization post intervention.

Results

Bivariate Comparisons

Of the total sample, 218 (41%) boys had come to the attention of the police as a victim of crime at some point in their lives. This proportion was slightly higher, but not significantly so, in the treatment group (46%) compared to the TAU group (38%), $\chi^2 (1, N = 535 = 3.65, p = .06)$. The results are presented in Table 1.

[[Insert Table 1 here]]

Victimization rates between the groups prior to and following intervention were compared. Prior to sentencing and intervention, 158 (73%) boys had come into contact with the police as a victim. Of these, 134 (85%) boys had been victims of a violent offence and 50 (32%) boys had been sexually victimized¹. The proportion of boys victimized prior to intervention was significantly higher in the treatment group (82%) compared to the TAU group (66%), $\chi^2 (1, N = 218) = 6.53, p = .01$; these boys also experienced a significantly higher number of number of violent victimizations prior to intervention ($M = 1.26$ & $M = 0.83$ victimizations respectively), $t (-2.578) = 158.36, p = .01$.

As indicated in Table 1, post-intervention, 74 (34%) boys had come to the attention to police as a victim; almost all ($n = 73$, 99%) for a violent offence; three had been sexually victimized. Bivariate analyses indicated that the rate of victimization following intervention was significantly lower in the treatment group (24%) compared to the TAU group (41%), $\chi^2(1, N = 218) = 7.15, p < .01$. Given the low base-rate of sexual victimization post-intervention, sexual and violent victimizations were combined for remaining analyses (i.e., estimated survival functions).

Survival Analysis

Survival analyses were then conducted on the 218 boys who had been in contact with the police as a victim of a sexual or violent offence. Survival functions were estimated separately for the TAU and treatment groups, with the survival curves presented in Figure 1. There was a significant difference between the groups in survival functions for sexual and violent victimization post-intervention, $\chi^2(1, N = 218) = 4.96, p < .05$. The results indicated that the TAU group were victimized at a faster rate than the treatment group. This finding supports our hypothesis that, similar to previous reoffending outcomes, the victimization outcomes for the treatment group were significantly better than the TAU group. However, this conclusion relates primarily to violent victimization, given the low base-rate of sexual victimization identified in the sample.

[[Insert Figure 1 here]]

Binomial Logistic Regression

Table 2 presents the results of the logistic regression. Intervention type and offending post-intervention were entered as predictors in the model. Previous victimization was also included as a covariate in the model due to current evidence indicating increased vulnerability for re-victimization in individuals with a history of victimization. Overall, the model was statistically significant, $\chi^2(3) = 81.617, p < .001$, explaining 43% (Nagelkerke R^2)

of the variance in victimization post-intervention, correctly classifying 81% of cases. Those who had offended post intervention were 3.9 times more likely to be victimized during this time than those who do not offend. However, previous victimization (i.e., prior to intervention) decreased the odds of victimization post intervention. Treatment intervention itself was not a unique predictor.

[[Insert Table 2 here]]

Discussion

Over 40% of the present sample had formal contact with the police as a complainant at some point in their lives, and violent and sexual victimization featured prominently in the histories of these boys. Slightly lower, though similar, lifetime rates have been found in other offender samples utilising self-report data (e.g., Deadman & MacDonald, 2004). The high proportion of victimization lends support to the overlap between offending and victimized populations.

A significantly higher proportion of boys from the treatment group had experienced crime victimization, particularly violent victimization, compared to the TAU group. This may be due, in part, to the referral process for the specialised program prioritising high-risk, high-needs clients. However, as hypothesised, post-intervention, it was the TAU group who showed a higher rate of victimization. The survival analyses indicated that the TAU group was also victimized at a faster rate than the treatment group. Hence, victimization can be reduced through offender treatment programs.

Part of the reason for this finding, we think, is the systemic focus of the treatment program that is potentially tapping the lifestyle risk factors (e.g., delinquent peer networks, school disengagement, family dysfunction and reduced guardianship and so on) common to both victimization and offending. Targeting these risk factors in the young person's social ecosystem seems to mitigate risk for future victimization as well as offending.

When we examined the predictors for post-intervention victimization, two important findings emerged. First, prior victimization did not predict later victimization. In fact, the results from the binary regression indicated that prior victimization reduced the risk of future victimization. This is contradictory to our expectations and current evidence in the field and has been difficult to reconcile. Second and similar to other findings (e.g. Deadman & MacDonald, 2004), continued involvement in crime appears to be a consistent predictor of crime victimization, above and beyond intervention type. Again this highlights the overlap between offending lifestyles and victimization risk and therefore the need to address such factors within intervention programs to improve outcomes for youth overall.

These findings must be considered within the limitations of the study. Although, arrest data (i.e., police charges) represents one of the most sensitive measures of official data, it is likely that these are underestimates of the true prevalence of crime victimization in this sample. This is likely compounded by the participants' experiences with the police and potential reluctance to report victimizations when they do occur (Shaffer & Ruback, 2002), perhaps because of their distrust of, or negative attitudes towards, criminal justice personnel (Smart et al., 2005) and because youth are, in general, less inclined than adults to report violent victimization to the police (Finkelhor & Ormrod, 1999). Nevertheless, these factors are likely to be similar across both groups and so while the rate of victimization reported here might be lower than the actual rate, the comparison across the two groups is likely to be unaffected by this issue.

We also had limited knowledge of the types of interventions received by the TAU group, which is likely to have varied across the TAU group (as did the non-treatment program interventions received by the treatment group). Hence, we cannot rule out that some of the TAU boys might have attended other systems-focused treatment programs that were similar to the treatment group program.

Although the groups were comparable across a number of demographic and offense history domains, this was not a true matched-samples design, which may have limited the comparability of the groups. Survival analysis was used, and is a strength of the study. Nevertheless, the difference in follow-up time between the two groups must also be acknowledged. Furthermore, the low base-rate of sexual victimization limited the ability to examine the difference in sexual victimization between the TAU and treatment groups, separately from violent, nonsexual victimization. Finally, our findings indicate that systems-focused treatment can reduce post-intervention victimization, but the causal pathway(s) for this apparent effect are yet to be explored. Additional research is required to investigate and tease out the key components that are contributing to these outcomes.

Notwithstanding these limitations, our findings have a number of theoretical and practical implications. In terms of theoretical advancement, these findings and our recommendations echo previous scholars in this area (e.g., Lauritsen & colleagues, 2001; 2002), that theories of victimization and offending should not be considered separate from one another as has been the case historically, and in fact the integration of theoretical perspectives to explain risks associated with victimization and offending is warranted. In particular, Hindelang et al.'s (1978) lifestyle/exposure theory, routine activities approach (Cohen & Felson, 1979), and iterations of these (e.g., Miethe & Meier, 1994) which were originally developed to explain risk of victimization, indeed appear to also explain risks for offending behavior. Such approaches highlight the importance of understanding the contextual and ecological dimensions of offending and victimization that interact with individual level factors to produce crime. Continued refinement and empirical testing of such frameworks is thus required to determine their utility for explaining the links between offending and victimization, and inform efforts aimed at preventing both.

In terms of practice, since youth offending and victimization are likely to share common individual and systemic risk factors, interventions have the potential to simultaneously address the vulnerabilities associated with both offending and victimization. The treatment program evaluated here is aimed at changing the lifestyles and activities within the youths' natural social ecosystems that increase risk of offending; for example, by addressing family factors (e.g. parental involvement, supervision), peer-related factors (e.g., increasing prosocial interactions and affiliation with prosocial peers and activities), and school-related factors (e.g., attendance and engagement). As well as reducing the risk of further offending, this study indicates that these activities also reduced the risk of further victimization (Schreck & Fisher, 2004). As Smart et al. (2005) stated, "a clearer focus on victimization could have dual benefits in reducing both antisocial behaviour and victimization" (p. 39).

There are fiscal benefits to interventions that are able to reduce boys' contacts with criminal justice systems, as either offenders or victims. Given the demand on criminal justice systems, limited fiscal resources, and an historical lack of resources/investment in interventions aimed at preventing victimization, there could be much benefit from greater evaluation of the impact of existing interventions on victimization, with effective programs developed further to simultaneously reduce offending and victimization. The treatment program included in this study has a number of features (e.g., treatment in the clients' home locations) that make it unusual; hence we recommend that practitioners and researchers more routinely assess the impact of their interventions on both victimization and perpetration.

To conclude, this study has revealed novel findings that suggest potentially new ways of addressing vulnerabilities in boys who offend. As Jennings and colleagues (2012) identified, an overall weakness in research and practice is a lack of studies/interventions that collect and examine offending and victimization data. This is the first published study to

examine victimization outcomes using a longitudinal design to evaluate the intersection between offending and victimization and evaluate the effectiveness of interventions to improve overall outcomes (e.g., offending and victimization) for boys who offend. It therefore offers a new area of inquiry for theory, practice and research. We recommend that further evaluation research be conducted to ascertain whether systems-focused interventions have the potential to reduce boys contact with criminal justice systems as both victims and perpetrators. Programs aimed at preventing and reducing violent crime may in fact be addressing this at a broader level than previously realised. In particular we need to ascertain the causal pathways in achieving such reductions. We encourage further development and research in this regard.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Disclosure of Interest

All authors declare that they have no conflicts to report.

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Footnotes

¹Percentages do not add up to 100% due to some participants being a victim of both violent and sexual offences

Table 1.

Cross-tabulation of victimization rates for treatment and TAU groups

	Treatment-group (<i>n</i> = 200)	TAU group (<i>n</i> = 335)	Total (<i>N</i> = 535)
Official victimization history	92 (46 %)	126 (38%)	218 (41%)
	<i>n</i> = 92	<i>n</i> = 126	<i>N</i> = 218
Victimization pre-intervention *	75 (82%)	83 (66%)	158 (72%)
Victimization post-intervention **	22 (24%)	52 (41%)	74 (34%)

* $p < .05$ ** $p < .01$

Table 2.

Impact of predictors on the likelihood of victimization post-intervention

Model and predictor	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>Sig</i>	EXP(β)	95 % CI for OR	
						Lower	Upper
Intervention type	-.530	.372	2.027	.155	.588	.284	1.221
Previous victimization	-2.869	.397	52.327	.000	.057	.026	.123
Reoffended	1.361	.544	6.273	.012	3.901	1.344	11.319
Constant	.352	.541	.422	.516	1.421		

Group membership (0 = no official victimization record post intervention, 1 = Official victimization record post intervention). Predictors: Intervention type (0 = TAU, 1 = treated), Previous victimization (0 = No, 1 = Yes), Reoffended post intervention (0 = No, 1 = Yes).

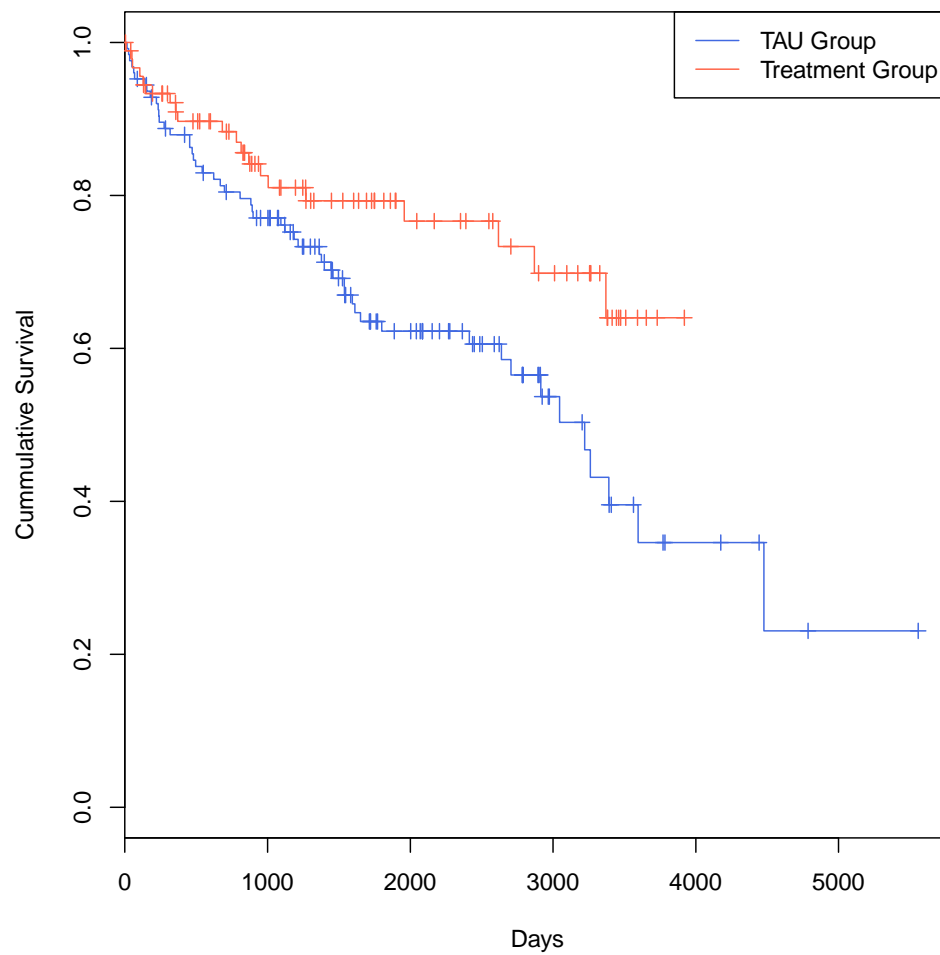


Figure 1. Kaplan-Meier survival functions for sexual and violent victimization post intervention